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OCIMUM TENUIFLORUM (LAMIACEAE), A NEW LARVAL HOST PLANT OF *COMIBAENA CASSIDARA* (GUENEE, 1857) (INSECTA: LEPIDOPTERA: GEOMETRIDAE)

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ABSTRACT

Ocimum tenuiflorum, commonly known as tulsi or holy basil plant, is reported for the first time as a larval host plant of *Comibaena cassidara* and minor individual variation in adults of the species is discussed.

INTRODUCTION

Comibaena cassidara (Guenée, 1857) is a moth belonging to family Geometridae and subfamily Geometrinae, with 32 millimetres wingspan (Hampson, 1895). Globally it is distributed in India, Pakistan, Nepal, Sri Lanka, China, Thailand, Singapore, Indonesia, Malaysia and Borneo (Hampson, 1895; Holloway, 1996; Shubhalaxmi, 2018; Robinson *et al.*, 2023; Walker, 1861; Bhardwaj *et al.*, 2016). Adult moths rest camouflaged under leaves during daytime (Shubhalaxmi, 2018). Larvae are yellowish drab and sides of the somites produced into fleshy processes, on which they fasten small pieces of withered leaves and sticks for camouflage with their surroundings (Hampson, 1895).

Their larvae are known to feed on *Acacia nilotica* (Leguminosae), *Flemingia macrophylla* (Leguminosae), *Glycosmis pentaphylla* (Rutaceae), *Ziziphus mauritiana* (Rhamnaceae), *Z. jujuba* (Rhamnaceae), *Mangifera indica* (Anacardiaceae), *Anacardium occidentale* (Anacardiaceae), *Lagerstroemia indica* (Lythraceae), *Cuscuta* sp. (Convolvulaceae), *Ixora* sp. (Rubiaceae) and *Shorea robusta* (Dipterocarpaceae) (Robinson *et al.*, 2023; Bhardwaj *et al.*, 2016).

Ocimum tenuiflorum (Lamiaceae), commonly known as tulsi or holy basil plant, is a semi-deciduous shrub of medium size, native to tropical and subtropical parts of Indian subcontinent and is widely cultivated in India (Sachdeva & Tongbram, 2019). It grows to 0.5-1 metre in height, with minute, greenish-white flowers borne on slender spikes (Sachdeva & Tongbram, 2019). Lepidopteran insects, which use this plant as their larval host plant are *Trichoplusia ni* (Noctuidae), *Lyncestis amphix* (Noctuidae), *Syngamia abruptalis* (Pyralidae), *Pyrausta phoeniceatis* (Pyralidae), *Pycnarmon cribrata* (Pyralidae), *Anisephyra ocularia* (Geometridae), *Hyposidra talaca* (Geometridae), *Attacus atlas* (Saturnidae) and *Pseudoborbo bevani* (Hesperiidae) (Robinson *et al.*, 2023; Manjula *et al.*, 2022; Nilamudeen, 2007; Sathe *et al.*, 2016). Hitherto, *C. cassidara* was not known to feed on *O. tenuiflorum* in the larval stage. In the present study, *O. tenuiflorum* is newly reported as a larval host plant of *C. cassidara* moth from Panihati (22.6994°N, 88.3702°E), North 24 Parganas district, West Bengal, India.

STUDY AREA AND METHODOLOGY

Panihati is an urban area in North 24 Parganas district of West Bengal state, India and is a part of lower Gangetic plains. It is located on the bank of the Ganga river. Average elevation of Panihati above mean sea level is 13 metres. Visual observations and larval rearing of *C. cassidara* was carried out during the study period. Rearing was done in a well aerated clean plastic container. Study period was from March 15, 2018 to March 26, 2018 (spring season) and November 03, 2022 to November 17, 2022 (winter season). Adult *C. cassidara* moths were identified following Guenée (1857), Walker (1861), Hampson (1895), Holloway (1996), and Shubhalaxmi (2018). *O. tenuiflorum* was identified following Sachdeva & Tongbram (2019). Photographs of the observations were captured with a Nikon Coolpix B500 compact camera and a Lenovo K33a42 smartphone.

RESULTS AND DISCUSSIONS

O. tenuiflorum is a common plant species in urban and rural areas of West Bengal. Observations were made in two different years, i.e., in 2018 and 2022. On 15.iii.2018, at 13:48 p.m., two lepidopteran larvae were observed on an *O. tenuiflorum* plant on the rooftop of author's residence. Height of the plant was about 2 feet and it was placed at about 11 feet height from the ground. Dry seed pods and dry leaves were attached on the back of the larvae, making them well camouflaged on the plant (Figure 7). For resting, the larvae were seen to coil their head and thorax towards the ventral side of their abdomen, and stay unmoving in that position. One of them was monitored regularly on the plant. Another one was collected for rearing. The larva was provided with a leafy branch of the plant along with inflorescence. The larva was observed to feed on flower buds from the inflorescence. New leafy branches with inflorescence were provided regularly and faecal matter of the larva was cleaned from the container. On 19.iii.2018, pupation was observed. The larva made a cocoon with separate plant parts like dry seed pods and dry leaves, joined together by silk, on an inflorescence (Figure 8). The adult moth eclosed on 26.iii.2018 (Figure 9). It stayed in pupa stage for 7 days, including the day of pupation. The adult individual was identified as *C. cassidara* based on following characters: wings pale green; forewing acute, costa white and slightly convex; hindwings extending much beyond the abdomen; hindwings with the outer margin rounded; the antemedial line of forewing angled below the cell; the post medial line not waved, irregular, near the margin, angled at vein 6 and with no white suffusion beyond it; black discal spots very small; the tornus of forewing and apex of hindwing very narrowly rufous brown, the latter only extending to vein 5; margins reddish brown and wavy; underside white with a line and a dot, the forewing underside washed green at the base; hind tibiae with 2 pairs of minute spurs and fore tibiae with a tuft of scaly hairs (Guenée, 1857; Hampson, 1895; Holloway, 1996; Walker, 1861; Shubhalaxmi, 2018). Another cocoon was observed on a leaf of the plant on 19.iii.2018, which was made by the other larva. That cocoon was collected and it eclosed on 26.iii.2018 as an adult *C. cassidara* (Figure 10). It was identified following Guenée (1857), Hampson (1895), Holloway (1996), Walker (1861), and Shubhalaxmi (2018). The second observation was made on November, 2022. A small-sized lepidopteran larva was observed on 03.xi.2022 at 09:43 a.m. The larva was perched on a leaf of a flowering *O. tenuiflorum* plant at the same site and it's body surface had some attached small plant parts. The plant's inflorescence was full of seed pods, some flowers, and some flower buds. The larva was observed to attach a

flower part on it's back by using it's mouthpart (Figure 4A-4C). It's thorax and abdomen was attached with parts of dry leaves and dry seed pods. On the plant, it was observed to feed on leaves and flower buds at night (Figure 2 & 3). The larva was collected for rearing. New leafy branches with inflorescence was provided to the larva. In captivity it was feeding on flower buds. It was observed to attach leaf parts, dry seed pods and young seed pods of the plant on it's back (Figure 1). On 09.xi.2022, the larva pupated. It made a cocoon by joining parts of small leaves, some parts from inflorescence, and seed pods with silk. The cocoon was made on a narrow apical part of a branch. It was perfectly camouflaged with the surroundings (Figure 5). Adult eclosion took place on 17.xi.2022 (Figure 6). It stayed in pupa stage for 8 days, including the date of pupation. The adult specimen was identified as *C. cassidara* following Guenée (1857), Hampson (1895), Holloway (1996), Walker (1861) and Shubhalaxmi (2018).

In the present study, larvae of *C. cassidara* were observed to feed on flower buds and leaves of *O. tenuiflorum*, and then adult moths successfully eclosed from their pupae. Hence, *O. tenuiflorum* is newly recorded as a larval host plant of *C. cassidara*.

Three specimens were bred, two females and one male. Although the specimens were not retained, they were photographed before release and exhibit some individual variation. This has not been previously documented for this species and we highlight this below.

Figure 6 is of a female that emerged on 17 November 2022. Figure 9 shows a female that emerged on 26 March 2018 and figure 10 shows a male that emerged on 26 March 2018. The female from November and the male from March are identical on the upperside, while the March female differs in a few small aspects from the other two individuals. Notably, the discal white line on the upperside forewing is prominent and reaches the costa in the two similar ones (November female and March male) and fainter and does not reach the costa in the female from March. On the underside, the dark forewing discal line is continuous in the March female (figure 9a) and maculate in the November female (figure 6a) and broken by the white wing veins in the March male (figure 10a).

REFERENCES

Bhardwaj, D.K., L. Mossang & S. Rahman. 2016. To Study the Moth (Lepidoptera: Heterocera) Fauna of Sal Forest in Manduwala Region, Dehradun. *International Journal of Advanced Research* 4(9): 82-92.

Guenée, M.A. 1857. *Uranides et Phalénites, Tome I.* In, *Par* MM. Boisduval *et* Guenée. *Histoire Naturelle des Insectes, Species Général des Lépidoptères, Tome Neuviéme*. Librairie Encyclopédique de Roret, Paris. pp. lvi+514.

Hampson, G.F. 1895. *The fauna of British India, including Ceylon and Burma*. *Moths- vol.3, Noctuidae (cont.) to Geometridae.* Taylor and Francis, London. 546 pp.+226 figs.

Holloway, J.D. 1996. The moths of Borneo (Part 9); Family Geometridae: Subfamilies Oenochrominae, Desmobathrinae, Geometrinae. *Malayan Nature Journal* 49: 147-326.

Manjula, K.N., S. Renuka, R. Rajarishi & R. Sundararaj. 2022. Insect pests of *Ocimum sanctum* Linn. in Karnataka. *Entomon* 47(1): 71-74.

Nilamudeen, M. 2007. *Pests of Tulsi (Ocimum tenuiflorum L.) and their Management*. M.Sc. (Ag.) Thesis. Kerala Agricultural University, Thrissur. 127 pp.

Robinson, G.S., P.R. Ackery, I. Kitching, G.W. Beccaloni & L.M. Hernández. 2023. *HOSTS - a Database of the World's Lepidopteran Hostplants* [Data set]. Natural History Museum.

https://doi.org/10.5519/havt50xw

(Accessed on 25 June, 2025)

Sachdeva, P. & V. Tongbram. 2019. *A Naturalist's Guide to the Garden Flowers of India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka*. John Beaufoy Publishing Ltd., Oxford. 176 pp.

Sathe, T.V., S.B. Jugale, R. Kumble, C. Kumble, A.D. Jadhav. 2016. Raigad district of Maharashtra as a possible metapopulation and host plant rich area for *Attacus atlas* Lin. (Lepidoptera: Saturnidae). *Biolife* 4(3): 576-581.

Shubhalaxmi, V. 2018. *Field Guide to Indian Moths,* Ed.1. Birdwing Publishers, India. pp. vi+461.

Walker, F. 1861. *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, Part XXII-Geometrites (cont.)*. British Museum, London. 499-1280 pp.

Fig. 1: Larva with attached host plant parts on its body (November).

Fig. 2: Larva feeding on a leaf (November).

Fig. 3: Larva feeding on a flower bud (November).

Fig. 4A: Process of attaching a flower part on the larva's back by it's mouthpart (November).

Fig. 4B: Process of attaching a flower part on the larva's back by it's mouthpart (November).

Fig. 4C: Process of attaching a flower part on the larva's back by it's mouthpart (November).

Fig. 5: Cocoon (November).

Fig. 6: Freshly eclosed female adult upperside (November).

Fig. 6a: Freshly eclsed female adult underside (November).

Fig. 7: Camouflaged larva on an inflorescence (March).

Fig. 8: Cocoon

Fig. 9: Freshly eclosed female adult (March).

Fig. 9a: Freshly eclosed female underside (March).

Fig. 10: Freshly eclosed male upperside (March).

Fig 10 a: Freshly eclosed male underside (March).